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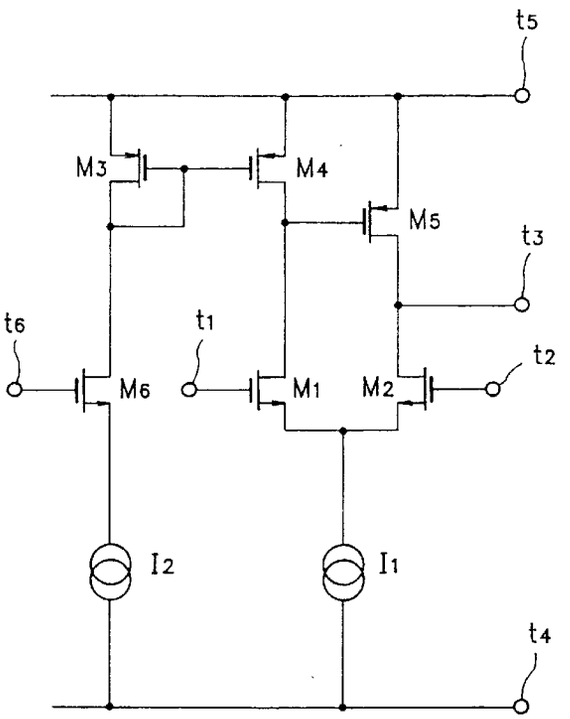
(54) High gain differential amplifier capable of reducing offset voltage.

(57) A high gain differential amplifier including a differential transistor pair (M_1, M_2) having first and second transistors (M_1, M_2) whose gates are connected to first and second input terminals (t_1, t_2) ; a current mirror circuit wherein the drain of the transistor (M_1) is connected to an output terminal ; a transistor (M_5) whose gate and drain are connected to the drain of transistor (M_1) and output terminal of the current mirror circuit, and to the output terminal (t_3) and the drain of transistor (M_2), respectively ; a transistor (M_6) whose drain and gate are connected to an input terminal of the current mirror circuit, and to a bias power supply terminal, respectively ; and constant-current source (I_1, I_2) which are connected to the common sources of differential transistor pair (M_1, M_2) and a source of the transistor (M_6), respectively. The addition of the sixth transistor (M_6) permits a voltage between the drain and source of the third and fourth transistors (M_3, M_4) to be nearly equal. As a result, a drain current ratio between the third and fourth transistors (M_3, M_4) can be precisely determined and thus an input offset voltage can be reduced to nearly zero.

FIG. 2



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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	US-A-4 658 157 (M.J. MCGOWAN) * column 3, line 29 - column 5, line 27 * ---	1-6	H03F3/45
A	IEEE JOURNAL OF SOLID-STATE CIRCUITS, vol. 27, no. 8, August 1992 NEW YORK US, pages 1168-1175, XP 000309396 J.H. ATHERTON ET AL 'AN OFFSET REDUCTION TECHNIQUE FOR USE WITH CMOS INTEGRATED COMPARATORS AND AMPLIFIERS' * page 1169, right column, line 34 - page 1171, left column, line 2; figures 3,4 * ---	1-6	
A	US-A-5 045 806 (R.C. YAN) * the whole document * -----	1-6	

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

H03F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	30 June 1995	Tyberghien, G

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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